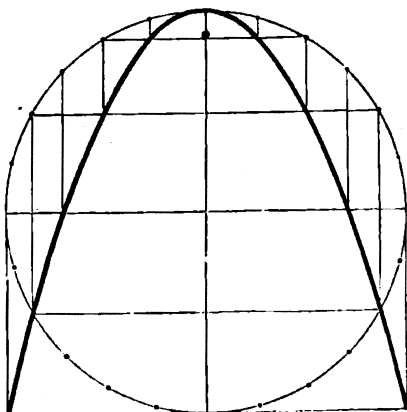# RETROGRESSIVE FINITE PARABOLA,

AS DERIVED FROM A CIRCLE.

Origin at Vertex.

$R =$ Radius of circle.

$y = R \sin \phi$,

$x = R \text{ vers } 2\phi$,

$\quad = 2R \sin^2\phi$;

$\therefore Rx = 2y^2$.

Base = Axis.

Focal distance = one-eighth of R.
Parameter = half the Radius.

Discovered in 1835, and delineated by continuous motion in 1840, by

H. PERIGAL, Jun.

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With Radius R draw a Circle, and its Diameter for axis of x. Take any arcs ϕ, from one extremity of the diameter, and bisect them. Draw from the arcs ϕ, lines ($y = R \sin \phi$) perpendicular,— and, from the half arcs, lines ($x = R \text{ versin } 2\phi = 2R \sin^2\phi$) parallel,— to the diameter. These parallels and perpendiculars meet or intersect in the curve of a PARABOLA, whose *equation* is $Rx = 2y^2$; with Base = Axis, Parameter = half R, and distance of Focus from Vertex = one-eighth of R.

1835, 1840.   H. PERIGAL, Jun.